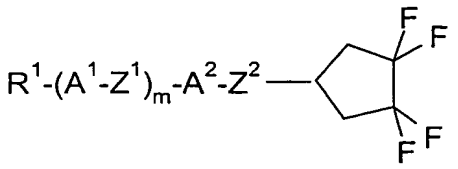
Patent Claims

1. 3,3,4,4-Tetrafluorocyclopentane compounds of the formula I



I

in which

R^1 is H, or an alkyl radical having up to 15 carbon atoms which is unsubstituted, monosubstituted by CN or CF_3 or at least monosubstituted by halogen, where, in addition, one or more CH_2 groups in these radicals may each, independently of one another, be replaced by -O-, -CH=CH-,  , -CO-, -CO-O-, -O-CO- or -O-CO-O- in such a way that O atoms are not linked directly to one another,

A^1 and A^2 are each, independently of one another,

(a) a trans-1,4-cyclohexylene radical, in which, in addition, one or more non-adjacent CH_2 groups may be replaced by -O- and/or -S-,

(b) a 1,4-phenylene radical, in which, in addition, one or two CH groups may be replaced by N,

(c) 1,4-cyclohexenylene,

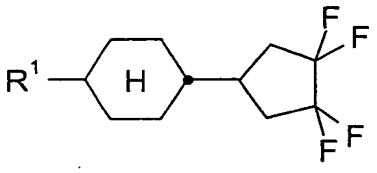
(d) a radical from the group consisting of 1,4-bicyclo[2.2.2]-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl,

where the radicals (a) to (d) may be substituted by one or more fluorine atoms,

Z^1 and Z^2 are each, independently of one another, -CO-O-, -O-CO-, $-CH_2O-$, $-OCH_2-$, $-CH_2CH_2-$, -CH=CH-, -C≡C-, $-(CH_2)_4-$, $-CF_2O-$, $-OCF_2-$, $-C_2F_4-$, $-CH=CH-CH_2CH_2-$ or a single bond, and

m is 0, 1 or 2.

2. Compounds of the formulae I1-I30



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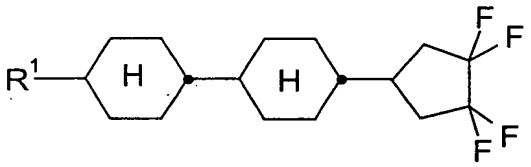

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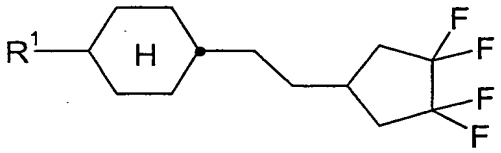

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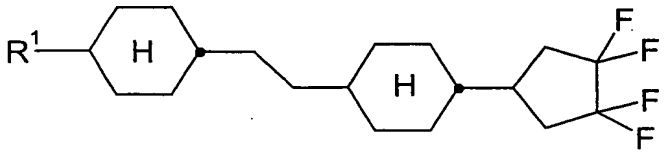

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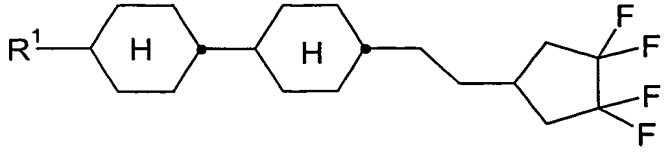

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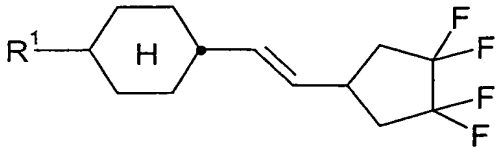

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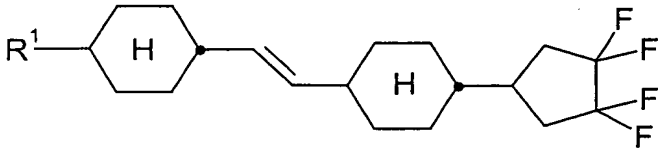

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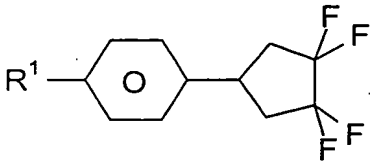

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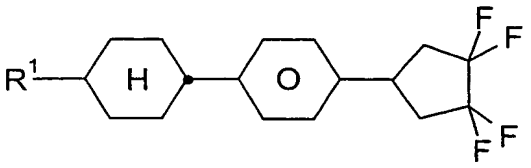

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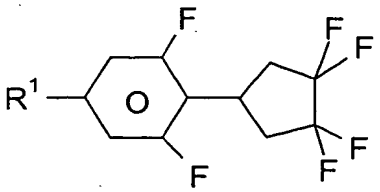

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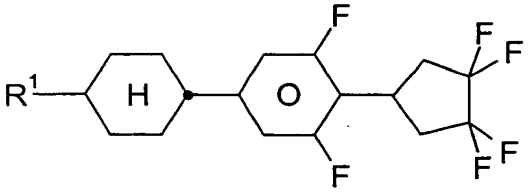

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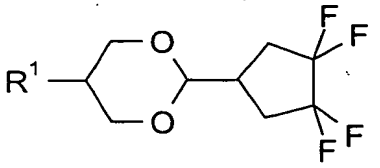

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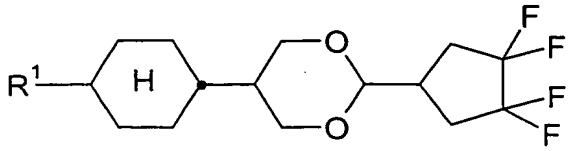

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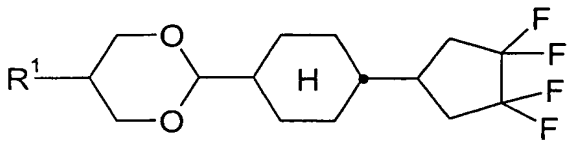

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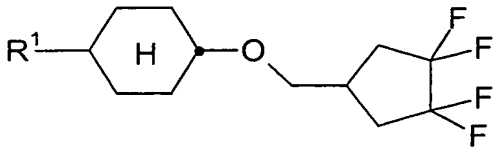

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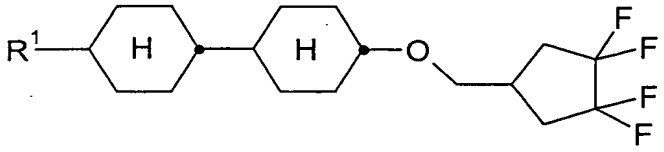

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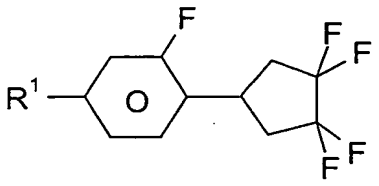

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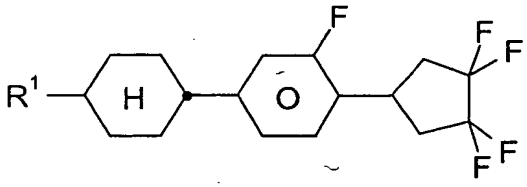

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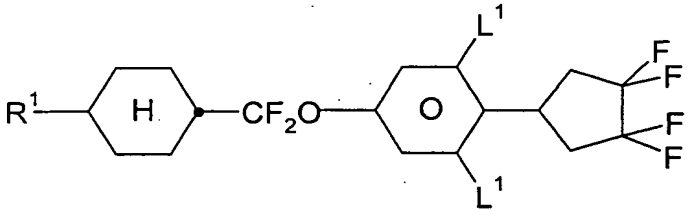

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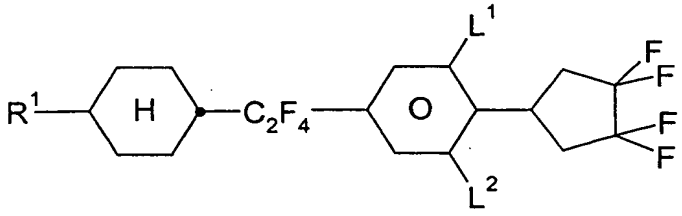

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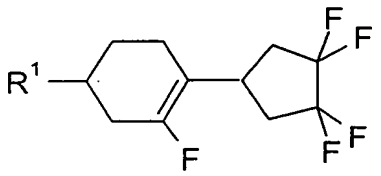

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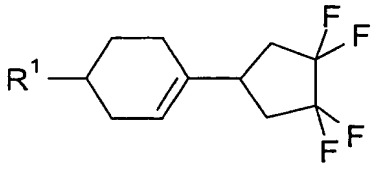

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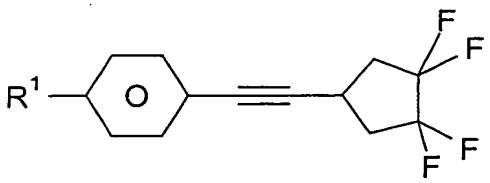

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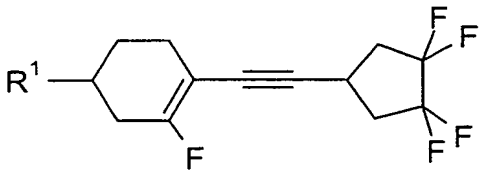

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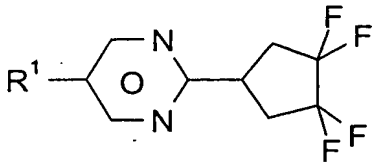

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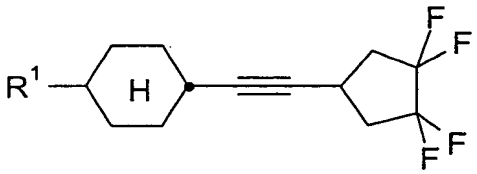

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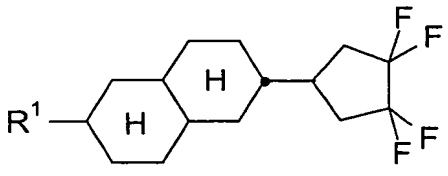

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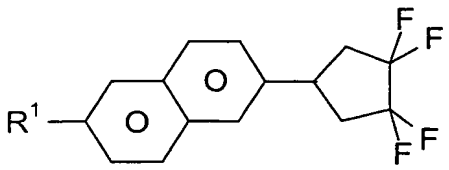

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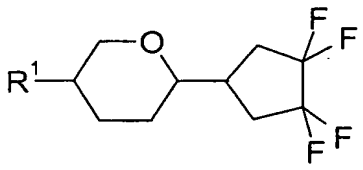

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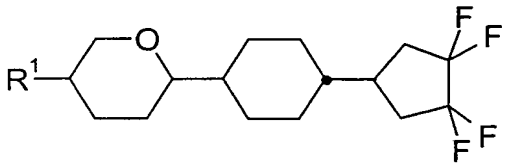

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in which R^1 is as defined in Claim 1, and L^1 and L^2 are each, independently of one another, H or F.

3. Compounds according to Claim 1 or 2, characterised in that R^1 is alkyl, alkoxy, alkenyl or alkenyloxy having up to 7 carbon atoms.

4. Use of compounds of the formula I as components of liquid-crystalline media.

5. Liquid-crystalline medium having at least two liquid-crystalline components, characterised in that it comprises at least one compound of the formula I.

6. Liquid-crystal display element, characterised in that it contains a liquid-crystalline medium according to Claim 5.

7. Electro-optical display element, characterised in that it contains, as dielectric, a liquid-crystalline medium according to Claim 5.